

Application/Control No.: 10/578,801
Examiner: Lori Baker Amerson

IN THE SPECIFICATION

Kindly amend the paragraph that begins at page 5, line 3, as follows:

Footboards 15 applied to ~~bar~~ support and guide member 14 at the opposed end relative to fulcrum 17, describe a curvilinear trajectory around fulcrum 17 and exert a power, schematised in figures 2 and 3 with arrow F, directed towards the user sitting on seat 13 during the entire performance of the exercise.

Kindly amend the paragraph that begins at page 6, line 3, as follows:

The footboard support plate 18 is applied to the support and guide member 14, for example by a shaft or connecting member 23, protruding from the guide member 14, and is free to rotate around the axis of shaft 23 relative to a starting position shown in figure 1. The rotation occurs with an angular travel equal to $\pm \alpha$, with α variable on the basis of the user's needs, relative to the position of figure 1, wherein plate 18 is perpendicular to the directrix, shown in figures. 2 and 3 with a dash-dot line, generated between the centre of rotation of plate 18, determined by the axis of shaft 23, and the centre of rotation of user seat 13 consisting of a support pin 24.

Kindly amend the paragraph that begins at page 7, line 3, as follows:

In the embodiment shown, actuator 16, for example, is a pneumatic piston mobile in a cylinder and constrained to the support and guide member 14 of footboards 15 by a connecting element, or shaft, 21, whose position on support and guide member 14 is preferably adjustable, for example. Such adjustment, which allows changing the exercise performance speed or the exerted power, is realised by a further adjustment means, or slide, not shown, which is located on the opposite side of ~~bar~~ support and guide member 14 relative to slide 26 for adjusting the footboard carrying plate 18. Optionally, actuator 16 can consist of an electrical motor or other equivalent means adapted for interacting with the ~~lever arm~~ support and guide member 14 as

Application/Control No.: 10/578,801
Examiner: Lori Baker Amerson

described.

Kindly amend the paragraph that begins at page 7, line 16, as follows:

The point of application of actuator 16 to ~~bar~~ support and guide member 14, which in the example is located in the proximity of footboards 15, could also be arranged in the proximity of fulcrum 17 or even at the opposite side relative to it.

Kindly amend the paragraph that begins at page 8, line 11, as follows:

Further possible adjustments consist in changing the piston stroke of actuator 16, as well as in restricting the angular travel of the ~~lever arm~~ support and guide member 14. In fact, the ~~lever arm~~ support and guide member 14 rotates around fulcrum 17 describing a hunting motion with angle $\pm\beta$ relative to a longitudinal axis of the apparatus determined by the generatrix between fulcrum 17 and the support pin of ~~rotation of seat 24 which allows user seat 13 to rotate~~, wherein angle β varies on the basis of the user's needs. According to a first exercising method, the hunting motion is performed alternately on opposed sides relative to the apparatus' longitudinal axis. The exercise apparatus 10 can also be used for performing a hunting motion on a single side, for example for rehabilitation purposes.

Kindly amend the paragraph that begins at page 9, line 16, as follows:

The user's seat 13, which can be adjusted so as to vary the angle between seta 27 and back 28, is connected to the carrying structure 12 by a support pin 24, which allows the rotation of user's seat 13 around the axis of support pin 24. In a possible embodiment shown in the figures by way of an example, the support pin 24 is fastened to a plate or base 32 integral with the support structure 12.

Kindly amend the paragraph that begins at page 10, line 5, as follows:

Seat User seat 13 is provided with two handles 31 that allow the user to perform the

Application/Control No.: 10/578,801
Examiner: Lori Baker Amerson

exercise in a more comfortable and safe manner. Moreover the exercise apparatus 10, to ensure higher use safety, comprises a safety device, not shown, for example actuatable by the user by a button located on one of the two handles 31, which controls the actuator to allow its user-controlled deactivation. The safety device can also cause the automatic deactivation of the actuator when a fixed threshold value of the exerted power is reached.

Kindly amend the paragraph that begins at page 11, line 3, as follows:

The support and guide member 14 of footboards 15 comprises, in fact, two parallel bars, which in the example shown are connected by a vertical stiffening plate 40 pivoted to the carrying structure 12. The bars form a C-shaped structure to which the top support plate 18' and the bottom support plate 18" of footboards 15 are constrained connected through the connecting shaft 23. The top and bottom ~~[[P]]~~plates 18' and 18", integral with one another, are turnable around the vertical axis of connecting shaft 23.

Kindly amend the paragraph that begins at page 11, line 12, as follows:

~~Apparatus according to claim 7, characterised in that~~ The invention also includes an embodiment where each of said footboards (15) comprises a frame (41) connected by said articulated joint (19) to ~~[[a]]~~ top plate (18') and to ~~[[a]]~~ bottom plate (18") integral to one another, as well as a support surface (42) for the foot, hinged to said frame (41) according to a horizontal axis. Footboards 15 are connected to one another by a bar or cam 43 which, as shown in figure 5, connects the bottom portion of the two frames 41.

The integral motion of footboards 15 is intended to make the apparatus use safer, that is, reduce the risk of accidents.

Kindly amend the paragraph that begins at page 11, line 23, as follows:

Application/Control No.: 10/578,801
Examiner: Lori Baker Amerson

Moreover, in the exercise apparatus 10' of the present invention, footboards 15, or the plates 18, are ~~connectable~~ connected to the carrying structure 12 by an additional bar 44, removable and with adjustable height, which arranges as pantograph parallel to bars 14 to keep the support plates 18 of the footboards orthogonal relative to a longitudinal axis of the apparatus during the exercise, as shown in figure 5, or at a different fixed angle, which in any case remains constant during the exercise. This expedient allows quicker learning of the proper method of use of the apparatus while maintaining the function of power training unchanged, in particular when high loads are applied for training. Different methods for power training are thereby realised, by locking the support plates 18 at a fixed angle, either orthogonal or not, relative to the longitudinal axis of apparatus 10', which allows the lower limbs to exercise starting from different bending/extension degrees, as well as to control the distribution of strength on the two footboards when apparatus 10' is used without locking the support plates 18.

Kindly amend the paragraph that begins at page 11, line 18, as follows:

Alternatively to the additional bar 44 there can be provided other adjustable means for locking the support plates 18 of the footboards during the exercise at a fixed angle relative to a longitudinal axis of the apparatus. Apparatus 10' further comprises a braking device 45 for restricting the relative motion between the support and guide member 14 of footboards 15 and the support plates 18 of footboards 15 themselves. A disc 46 pressed against the top plate 18' by an adjustable stem 47 operates to brake[[s]] by friction the rotating motion of the plates 18, or of footboards 15 with a strength adjustable by the user. Means 48 for measuring the relative rotation between the support plates 18 of the footboards and the support and guide member 14 of the same, for example consisting of an encoder, are, moreover, schematically shown in figure 6.

Application/Control No.: 10/578,801
Examiner: Lori Baker Amerson

Kindly amend the paragraph that begins at page 13, line 8, as follows:

From the measurement of the relative clockwise and counter-clockwise rotation of plates 18 relative to the support member 14 it is possible to obtain and optionally view on display 34 both the exercise performance speed and the motion control ability, intended as reduction of the oscillations of relative rotation. The exercise apparatus for exercising lower limbs 10, object of the present invention, is used by sitting on user seat 13, gripping handles 31 and placing the feet on footboards 15. At this point, with a free movement of extension of lower limbs, the user moves footboards 15 for example alternately to his/her right and to his/her left, making the same perform a curvilinear trajectory with an angular travel with angle β on each side. In performing this exercise, the user will have to oppose the power exerted by actuator 16 that returns footboards 15 to the starting position.

Kindly amend the paragraph that begins at page 14, line 1, as follows:

The exercise apparatus ~~for exercising lower limbs 10~~ object of the present invention, advantageously allows very accurate reproduction of the movement of lower limbs of the human body during the practise of ski touring, activity wherein the same work concurrently at different bending/extension angles performing an alternating eccentric and concentric muscular exercise. In fact, the apparatus advantageously allows making both lower limbs of the human body work with a movement called of "counter resistance", at different and adjustable bending/extension angles of the pelvis, hip, knee and ankle joints.

Kindly amend the paragraph that begins at page 13, line 8, as follows:

From the measurement of the relative clockwise and counter-clockwise rotation of

Application/Control No.: 10/578,801
Examiner: Lori Baker Amerson

plates 18 relative to the support and guide member 14 it is possible to obtain and optionally view on display 34 both the exercise performance speed and the motion control ability, intended as reduction of the oscillations of relative rotation. The exercise apparatus for exercising lower limbs 10, object of the present invention, is used by sitting on seat 13, gripping handles 31 and placing the feet on footboards 15. At this point, with a free movement of extension of lower limbs, the user moves footboards 15 for example alternately to his/her right and to his/her left, making the same perform a curvilinear trajectory with an angular travel with angle β on each side. In performing this exercise, the user will have to oppose the power exerted by actuator 16 that returns footboards 15 to the starting position.